

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for allocating pending requests for data packet transmission at a number of inputs to a number of outputs of a switching system in successive time slots, the method comprising a matching method, ~~that performs the allocation of the pending requests, the matching method including a number of steps for incrementally allocating the requests, wherein as a result of each step a matching information is provided, wherein in each time slot a request information is provided, the request information indicating the data packets at the inputs requesting transmission to respective outputs,~~

the matching method comprising the steps of:

providing a first parallel request information in a first time slot, the first parallel request information indicating the data packets at the inputs requesting transmission to the outputs of the switching system;

performing a first step in the first time slot depending on the first parallel request information to obtain a first matching information;

providing a last parallel request information in a last time slot successive to the first time slot;

performing a last step in the last time slot depending on the last parallel request information and depending on the first matching information to obtain a final matching information; and

assigning the pending data packets at the number of inputs to the number of outputs ~~in dependence~~ based on the final matching information.

2. (Original) Method according to claim 1, wherein the matching method is performed in a first and a second thread, which are shifted, so that the first step of the second thread and a second step of the first thread are performed in the same time slot.

3. (Currently Amended) Method according to claim 1, wherein, between the first step and the last step, ~~of the matching method~~ a number of intermediate steps are performed in successive intermediate time slots between the first time slot and the last time slot, wherein a respective intermediate parallel request information is provided in the respective intermediate time slot;

wherein each of the steps provides an intermediate matching information to a successive intermediate step depending on an intermediate matching information from the preceding intermediate step and depending on a parallel request information of the respective intermediate time slot,

wherein the first step provides the first matching information to the first of the intermediate steps, and wherein the last step receives the intermediate matching information from the last of the intermediate steps.

4. (Currently Amended) Method according to claim 3, wherein the performing of one of the intermediate and the last steps includes the steps of:

modifying the respective intermediate and last parallel request information depending on the respective first and intermediate matching information provided by the preceding step; and performing the one step depending on the modified respective parallel request information to obtain a partial matching information.

5. (Original) Method according to claim 4, wherein the one step further includes the step of:

merging the intermediate matching information provided by the preceding step and the partial matching information to obtain the respective intermediate or final matching information.

6. (Original) Method according to claim 4, wherein the partial matching information is modified depending on at least one of the following:

the matching information provided by any of the steps;
the partial matching information of any of the steps;
the pending request information;
a position information indicating position of the respective step within the steps of the matching method.

7. (Currently Amended) Method according to claim 3, wherein each of the first, intermediate and last parallel request information depends on the number of pending requests at each of the inputs with respect to each of the outputs.

8. (Currently Amended) Method according to one of the ~~claims~~ claim 3, wherein the parallel request information is selectively provided to the first, intermediate and last steps depending on at least one of:

the matching information obtained by the respective step of the matching method;

the current number of pending requests of each input relative to each of the outputs; and

a position information indicating a position of the respective step within the steps of the matching method.

9. (Currently Amended) An allocation device for allocating pending requests for data packet transmission at a number of inputs to a number of outputs of a packet switching device in successive time slots,

wherein the allocation of the pending requests is performed by a matching method that includes a number of steps for incrementally allocating the requests of the data packets, the device comprising:

a first allocation stage for performing a first step of the matching method in a first time slot depending on a first parallel request information provided in the first time slot to obtain a first matching information;

a last allocation stage for performing a last step of the matching method in a last time slot depending on a last parallel request information provided in the last time slot and depending on the first matching information to obtain a final matching information, wherein the respective provided request information indicates the data packets at the inputs requesting transmission to the respective outputs; and

an allocation unit to allocate the pending data packets at the number of inputs to the number of outputs ~~in dependence~~ based on the final matching information.

10. (Currently Amended) Allocation device according to claim 9, further comprising:

one or more intermediate allocation stages which are located between the first allocation stage and the last allocation stage and are connected in a series within each other and with the first and the last allocation stage, and for performing a number of intermediate steps of the matching method in successive intermediate time slots between the first time slot and the last time slot, wherein each of the allocation stages provides an intermediate matching information to a successive intermediate allocation stage wherein the intermediate matching information depending on an intermediate matching information received from the preceding intermediate allocation stage and depending on an provided intermediate parallel request information of the respective intermediate time slot;

wherein the first allocation stage provides the first matching information to the first of the intermediate allocation stages; and

wherein the last allocation stage receives the intermediate matching information from the last of the intermediate allocation stages.

11. (Currently Amended) Allocation device according to claim 10, wherein at least one of the allocation stages comprises:

a prefilter for modifying the respective intermediate and last parallel request information depending on the respective first and intermediate matching information provided by the preceding allocation stage;

an allocator for performing the step of the matching method of the respective allocation stage depending on the filtered respective parallel request information to obtain a partial matching information.

12. (Original) Allocation device according to claim 11, wherein at least one of the allocation stages further comprises:

a merging unit for merging the intermediate matching information provided by the preceding allocation stage and the partial matching information to obtain the respective intermediate or final matching information.

13. (Original) Allocation device according to claim 11, wherein at least one of the allocation stages further comprises:

a postfilter unit for modifying the partial matching information depending on at least one of the following:

the matching information provided by any of the allocation stages; the partial matching information of any of the allocation stages;

the pending request information in the respective time slot; and

a position information indicating the position of the respective allocation stage within the series of allocations stages.

14. (Currently Amended) Allocation device according claims 10 further comprising:

a request counter to provide the first, intermediate and last parallel request information depending on the number of pending requests at each of the inputs with respect to each of the outputs in the respective first, intermediate and last time slot.

15. (Currently Amended) Allocation device according to claims 10, further comprising:

a selection unit to selectively provide the parallel request information to the first, intermediate and last allocation stage depending on at least one of:

the matching information obtained by the respective step of the matching method;

the current number of pending requests of each input relative to each of the outputs; and

a position information indicating position of the respective step within the steps of the matching method.

16. (Currently Amended) ~~A computer program element comprising program code means, when said program is run on a computer, for allocating pending requests for data packet transmission at a number of inputs to a number of outputs of a switching system in successive time slots by a matching method that performs the allocation of the pending requests, the matching method including a number of steps for incrementally allocating the requests, wherein as a result of each step a matching information is provided, wherein in each time slot a request information is provided, the request information indicating the data packets at the inputs requesting transmission to respective outputs, the matching method comprising the steps of:~~

A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for allocating pending requests for data packet transmission at a number of inputs to a number of outputs of a switching system in successive time slots, the method steps comprising:

providing a first parallel request information in a first time slot, the first parallel request information indicating data packets at the inputs requesting transmission to the outputs of the switching system;

performing a first step in the first time slot depending on the first parallel request information to obtain a first matching information;

providing a last parallel request information in a last time slot successive to the first time slot;

performing a last step in the last time slot depending on the last parallel request information and depending on the first matching information to obtain a final matching information; and

assigning the pending data packets at the number of inputs to the number of outputs ~~in dependence~~ based on the final matching information.

17. (Canceled)